

Patent claims

1. A rotor blade (16) for a turbomachine,
in particular for a gas turbine through which a working fluid
5 (20) flows,

having a rotor blade root (33), a platform region (21)
extending transversely with respect thereto, and a curved main
blade profile (24),

10 which extends from a leading edge (25), onto which the working
fluid (20) can flow, to a trailing edge (26), between which are
formed a suction side (27) and a pressure side (28) of the main
blade profile (24),

and having a relief slot (30) in the main blade profile (24),
characterized in that

15 the relief slot (30) is arranged in the region of the trailing
edge (26), at that end of the main blade profile (24) which
faces the platform region (29), extends through the main blade
profile (24) from the suction side (27) to the pressure side
20 (28) and is oriented substantially transversely to the
direction of flow of the working fluid (20).

2. The rotor blade (16) as claimed in claim 1, characterized
in that the relief slot (30) is provided at a distance B, which
amounts to at least 90% of a chord length A of a profile chord
25 (S) measured between the leading edge (25) and the trailing
edge (26), from the leading edge (25) of the rotor blade (16).

3. The rotor blade (16) as claimed in claim 1 or 2,
characterized in that the relief slot (39) has a length L which
30 is in the range from 5% to 10% of the blade height H of the
main blade profile (24).

4. The rotor blade (16) as claimed in claim 1, 2 or 3, characterized in that that end of the relief slot (30) which faces the platform region (21) is at a distance Z of from 5% to 10% of the blade height H of the main blade profile (24) from 5 the platform region (21).

5. The rotor blade (16) as claimed in one of the preceding claims, characterized in that the relief slot (30) is rounded at its ends.

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6. The rotor blade (16) as claimed in one of the preceding claims, characterized in that the relief slot (30) is filled with a filler material (33) which has a coefficient of thermal expansion which is less than or equal to that of the blade 15 material (34).

7. The rotor blade (16) as claimed in one of the preceding claims, characterized in that the filler material (33) is a solder.

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8. The rotor blade (16) as claimed in one of the preceding claims, characterized in that the rotor blade (16) is single-crystalline or directionally solidified.

25 9. A gas turbine (1) having the rotor blade (16) as claimed in one of the preceding claims.